



U.S. Department of
Transportation



Intelligent Transportation Systems Standards Fact Sheet

NTCIP 1201

August 2002

National Transportation Communications for ITS Protocol (NTCIP) - Global Object Definitions

Originally published as NEMA TS 3.4-1997

Overview

The National Transportation Communications for Intelligent Transportation System (ITS) Protocol (NTCIP) is a family of standards that provides both the rules for communicating (called protocols) and the vocabulary (called objects) necessary to allow electronic roadside equipment from different manufacturers to operate with each other as a system. The NTCIP is the first set of standards for the transportation industry that allows transportation systems to be built using a “mix and match” approach with equipment from different manufacturers. Therefore, NTCIP standards reduce the need for reliance on specific equipment vendors and customized one-of-a-kind software. To assure both manufacturer and user community support, NTCIP is a joint product of the National Electronics Manufacturers Association (NEMA), the American Association of State Highway and Transportation Officials (AASHTO), and the Institute of Transportation Engineers (ITE).

The NTCIP family of standards is a joint project of the following standards development organizations:

American Association of State Highway and Transportation Officials (AASHTO)

Institute of Transportation Engineers (ITE)

National Electrical Manufacturers Association (NEMA)

(Contact information is shown at the end of this fact sheet)

To obtain a copy of this standard, please contact:
Global Engineering Documents
Web site: <http://global.ihs.com>

Publication Date: November 1997
Amendment 1 Date: December 1998

Human communications relies on a vocabulary of words, each defined with a fixed meaning and spelling that are understood by the members of the conversation group. Computers have a similar vocabulary, called “objects” in the NTCIP standards. These objects define all possible commands, responses and information that may be exchanged among microprocessor-controlled electronic equipment, a central computer, and by extension, their human operators. The NTCIP groups these objects by subject material (e.g., dynamic message signs) and calls these groupings “object definitions.” The objects defined in this standard are generic to many different types of devices, e.g., the standard includes objects for time and manufacturer's name.

What is this standard for?

This standard, **NTCIP 1201, NTCIP - Global Object Definitions**, provides the vocabulary—commands, responses and information—necessary for general device management, including those objects required for device identification, time-based schedule configuration, and event log configuration. As a minimum, all roadside devices that are required to communicate with a central system should support the device identification objects.

The NTCIP-Global Object Definitions defines the vocabulary for those features that are supported by a variety of devices. Simple devices may only support the device identification objects. More complex devices, such as controllers, may be required to support additional features such as time base schedules and event logs. This standard includes conformance group requirements and conformance statements to aid in the preparation of procurement specifications.

Who uses it?

This standard should be used by transportation engineers involved with the specification, testing, and operation of roadside equipment. Hardware and software developers should design their products to be compliant with this standard, including support of any appropriate options.

How is it used?

This standard defines a vocabulary of “objects” used to assure that the transportation management center computer-system and roadside devices “speak” a common language. A message must be understood by the device it was intended for, and equally important, it must not be misunderstood or misinterpreted by another device on the same network. Object definitions unambiguously define the content, terminology, value, and format of commands, responses, and information affecting communications with roadside devices.

This standard must be used with one of the NTCIP communications profiles (NTCIP 1101, 2001, etc.) which provide the communications channel for information transfer between devices.

Scope

Communications between a transportation management center’s central computer and roadside devices are accomplished by using the objects defined in **NTCIP 1201, NTCIP - Global Object Definitions**. These objects define the information, commands and responses that must be understood by the devices at both ends of the communications channel.

Related documents

To accommodate the broad scope of this standardization effort, the NTCIP standard has been divided into several individual standards. A detailed list of related documents is available on the **NTCIP 9001, NTCIP Guide** fact sheet. (The NTCIP Guide is also available on-line at www.ntcip.org).

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